

WHAT IS CLAIMED IS:

1. A position detecting method comprising the steps of:
 - 5 forming an image of a mark on a sensor;
performing a first process that processes a raw signal obtained from the sensor with plural parameters;
performing a second process that determines
10 an edge of a signal processed by the first process for each parameter;
determining a parameter from a result of the second process obtained for each parameter; and
calculating a position of the mark based on a
15 determined parameter.
2. A position detecting method according to claim 1, wherein the first process is zero phase filtering, and the parameters for the first process
20 include an order of a filter.
3. A position detecting method according to claim 1, wherein the first process is polynomial approximation, and the parameters for the first process
25 include an order of a polynomial.

4. A position detecting method according to claim 1, wherein the mark includes plural elements arranged at a certain pitch based on a design value, and said step of determining the parameter is based on
5 a deviation of intervals between the elements from the design value calculated by using the result of the second process.

5. An exposure apparatus comprising:
10 a projection optical system that projects a pattern formed on a reticle onto a wafer; and
a position detection system for detecting a position of a mark formed on the wafer, said positing detection system detecting the position of the mark
15 using the position detecting method according to claim 1.

6. A device fabrication method comprising the step of:
20 applying resist onto a wafer;
projecting a pattern formed on a reticle onto the wafer using an exposure apparatus according to claim 5; and
developing the resist exposed.

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